ANIMAL HUSBANDRY DIVISION
HAWAII AGRICULTURAL EXPERIMENT STATION
HONOLULU, HAWAII

Under the joint supervision of the

UNIVERSITY OF HAWAII
and the
UNITED STATES DEPARTMENT OF AGRICULTURE

Progress Notes on Experiments and Other Items of Interest

No. 9 March, 1935

These progress notes on experimental work and other items of interest to livestock men in the Territory are issued from time to time by the Animal Husbandry Division. You are invited to suggest other lines of research that you deem important and to submit inquiries to the University.

A GENERAL REPORT OF THE ANIMAL HUSBANDRY DIVISION OF THE HAWAII AGRICULTURAL EXPERIMENT STATION FOR THE FISCAL YEAR ENDING JUNE 30, 1934

Introduction

This issue of the Progress Notes in place of giving the detailed results of some definite experiment presents general information about the University dairy and piggery such as production of individual animals, feed costs, health records, etc. A brief account of the experimental work of the year is also presented.

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HAWAII AGRICULTURAL EXPERIMENT STATION
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Progress Notes on Experiments and Other Items of Interest

No. 3 March, 1953

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OF THE HAWAII AGRICULTURAL EXPERIMENT STATION
FOR THE FISCAL YEAR ENDING JUNE 30, 1952

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DAIRY CATTLE

By G.W.H. Goo

At the close of the fiscal year the University herd consisted of 40 Holsteins and 11 Guernseys. During the fiscal year 4 Holstein heifers and one Guernsey heifer were registered.

Thirty-four different cows were milked, producing 215,071 pounds of milk. Eleven cows were in the herd part of the year, leaving an average production of 7,247 pounds for the 23 full-year cows. Segregated as to breeds, 17 full-year Holstein cows averaged 7,428 pounds and 6 full-year Guernseys averaged 6,736 pounds.

During the year, one Holstein bull calf and one Holstein female calf were sold as breeders. Four Holstein male calves, 5 Holstein female calves and 3 Guernsey male calves were sold as veal. Three heifers, 6 cows and one Guernsey bull were sent to market.

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The details of milk production, butter fat production, feed cost per cow, total milk production cost, etc. are given in the following pages.

YEARLY PRODUCTION RECORDS OF COWS IN THE UNIVERSITY OF HAWAII HERD

JULY 1 TO JUNE 30

11-34 400 S-B 95550

Barn No.	NAME	Born	Date First Calf	1924-1925	1925-1926	1926-1927	1927-1928	1928-1929	1929-1930	1930-1931	1931-1932	1932-1933	1933-1934
	HOLSTEINS:												
42	Korndyke Mead Manca	April 26, 1922	Nov. 29, 1924	4,703	6,421	7,072	7,252	6,105	5,494	5,379	5,435	7,370	7,932[1]
49	Korndyke El Prado Manca	Dec. 6, 1922	Feb. 1, 1925	4,674	7,700	9,577	10,805	9,787	7,461	7,777	8,765	7,059	1,899[2]
52	Natoma Hawaii Creamcup 2nd	July 3, 1923	Feb. 23, 1926	.....	3,275	7,002	7,379	8,309	8,681	8,626	9,205	6,133	7,622[3]
65	DeKol Prilly Segis Pontiac	Sept. 25, 1925	Oct. 31, 1927	.....	.....	.....	5,900	6,298	5,971	7,752	9,078	8,634	8,770
68	Uniwai Prilly Manca	Jan. 14, 1926	June 14, 1928	.....	.....	.....	433	6,443	6,950	9,798	9,124	8,603	8,504
71	Uniwai Natoma Mead Prilly	Feb. 23, 1926	May 14, 1928	.....	.....	.....	911	4,155	3,978	5,612	6,772	3,789	7,226
72	Uniwai DeKol Segis	May 8, 1926	Aug. 8, 1928	.....	.....	.....	.....	5,107	6,502	5,678	5,044	6,157	7,611
74	Uniwai Luku Prilly	July 28, 1926	Aug. 26, 1928	.....	.....	.....	.....	4,746	1,302	7,687	7,843	6,876	6,229
79	Uniwai Princess Segis	Feb. 6, 1927	July 9, 1929	.....	.....	.....	.....	.....	5,606	5,469	6,700	5,602	8,188
82	Uniwai Segis	Mar. 19, 1927	June 7, 1929	.....	.....	.....	.....	610	5,364	5,381	6,857	7,695	7,500
83	Uniwai DeKol Sarcastic	April 24, 1927	June 19, 1929	.....	.....	.....	.....	342	6,332	4,389	3,730	10,042	8,106
85	Uniwai Segis Korndyke	Aug. 1, 1927	July 27, 1929	.....	.....	.....	.....	.....	4,442	4,956	6,125	7,490	5,849[4]
88	Uniwai DeKol Pontiac	Oct. 31, 1927	Mar. 1, 1930	.....	.....	.....	.....	.....	2,957	6,344	5,938	9,942	10,356
92	Uniwai Prilly Korndyke	Nov. 22, 1927	June 7, 1930	.....	.....	.....	.....	.....	541	4,696	6,373	3,285	6,433
99	Uniwai Sarcastic	July 27, 1928	Dec. 11, 1930	.....	.....	.....	.....	.....	.....	3,957	6,933	7,495	7,096
102	Uniwai Creator Korndyke	Nov. 28, 1928	April 15, 1931	.....	.....	.....	.....	.....	.....	1,878	6,193	6,867	2,691[5]
104	Uniwai Pabst Korndyke	Jan. 8, 1929	July 20, 1931	.....	.....	.....	.....	.....	.....	.....	6,212	6,791	9,071
105	Uniwai Baby Gem Segis	Jan. 21, 1929	Sept. 21, 1932	.....	.....	.....	.....	.....	.....	.....	.....	6,585	6,736
108	Uniwai Sarcastic Prilly	June 22, 1929	Jan. 13, 1932	.....	.....	.....	.....	.....	.....	.....	4,123	5,271	5,736
109	Uniwai Creator Joletta	June 30, 1929	Aug. 1, 1932	.....	.....	.....	.....	.....	.....	.....	.....	6,833	7,523
110	Uniwai Creator Girl	July 28, 1929	Feb. 28, 1932	.....	.....	.....	.....	.....	.....	.....	2,843	4,458	.....[6]
111	Uniwai Sarcastic Segis	Dec. 15, 1929	July 29, 1932	.....	.....	.....	.....	.....	.....	.....	.....	6,403	3,836
112	Uniwai Princess Sarcastic	Mar. 20, 1930	Dec. 17, 1932	.....	.....	.....	.....	.....	.....	.....	.....	4,621	7,347
119	Uniwai DeKol Korndyke Prilly	Nov. 29, 1930	July 2, 1933	.....	.....	.....	.....	.....	.....	.....	.....	.....	6,860[9]
122	Uniwai Korndyke Pontiac	Mar. 10, 1931	Jan. 9, 1934	.....	.....	.....	.....	.....	.....	.....	.....	.....	6,013
123	Uniwai Sarcastic DeKol	May 4, 1931	Feb. 18, 1934	.....	.....	.....	.....	.....	.....	.....	.....	.....	3,628
125	Uniwai Segis Sarcastic	Sept. 4, 1931	Feb. 25, 1934	.....	.....	.....	.....	.....	.....	.....	.....	.....	3,387
	GUERNSEYS:												
51	Lulu of Hawaii	June 16, 1923	Sept. 30, 1925	.....	6,293	7,826	7,902	7,907	8,207	5,463	5,862	8,724	6,697
67	Sterling's Golden Bess	Dec. 24, 1925	July 25, 1928	.....	.....	.....	.....	6,054	4,260	4,808	5,330	6,387	1,589[7]
86	Alberta's Floss	Sept. 8, 1927	Mar. 23, 1930	.....	.....	.....	.....	.....	1,582	3,588	4,559	3,595	6,052
89	Floss Boy's Clementina	Nov. 1, 1927	July 18, 1930	.....	.....	.....	.....	.....	608	5,217	6,525	5,713	7,368
96	Islander's Lulu	Mar. 24, 1928	Nov. 27, 1930	.....	.....	.....	.....	.....	.....	3,317	3,394	4,769	7,178
101	Islander Lady	Sept. 20, 1928	July 3, 1931	.....	.....	.....	.....	.....	.....	.....	6,463	5,960	7,040
103	Islander's Alberta of Hawaii	Dec. 28, 1928	Jan. 28, 1933	.....	.....	.....	.....	.....	.....	.....	.....	2,999	6,084
118	Floss Boy's Lulu	Nov. 27, 1930	June 18, 1933	.....	.....	.....	.....	.....	.....	.....	.....	28	914[8]

1. Sold May 17, 1934
2. Sold Oct. 2, 1933
3. Sold May 17, 1934
4. Sold May 17, 1934
5. Sold Jan. 8, 1934
6. Died July 3, 1933
7. Sold Oct. 2, 1933
8. Sold Oct. 2, 1933
9. Sold May 17, 1934

YEARLY PRODUCTION RECORDS OF COWS IN THE UNIVERSITY OF HAWAII HERD

JULY 1 TO JUNE 30

Item No.	NAME	Born	Date First Calf	1924-1925	1925-1926	1926-1927	1927-1928	1928-1929	1929-1930	1930-1931	1931-1932	1932-1933
	HOLSTEINS											
42	Kornelyke Ales Alanco	April 26, 1922	Nov. 29, 1924	4,204	6,421	7,074	7,272	6,105	5,404	5,124	5,417	7,720
40	Kornelyke II Prude Alanco	Dec. 6, 1922	Feb. 1, 1925	4,974	7,700	9,177	12,807	9,187	7,461	7,272	8,705	7,959
52	Kornelyke Hawaii Tryscoop 2nd	July 5, 1917	Feb. 22, 1926		4,274	7,279	5,108	8,551	8,434	8,347	6,123	7,427
65	Dekal Fully Segis Pieter	Sept. 21, 1918	Dec. 31, 1927			7,900	5,506	7,271	7,252	9,025	8,424	6,274
66	Tolowai Fully Alanco	Jan. 14, 1926	June 14, 1928				433	8,447	6,857	9,128	8,807	8,504
72	Tolowai Xenos Maid Fully	Feb. 22, 1926	May 14, 1929				911	4,154	8,978	7,812	6,222	5,720
77	Tolowai Dekal Segis	May 4, 1926	Aug. 8, 1929					5,107	8,007	5,408	5,017	5,157
94	Tolowai Lulu Fully	July 28, 1926	Aug. 26, 1929					4,744	4,202	7,267	7,212	6,876
99	Tolowai Princess Segis	Feb. 6, 1927	June 9, 1929						8,408	5,904	8,207	5,007
82	Tolowai Segis	May 12, 1927	June 7, 1929					910	8,344	5,181	6,832	7,205
83	Tolowai Dekal Serenade	April 24, 1927	June 19, 1929					462	6,111	4,189	4,760	4,704
85	Tolowai Segis Karmelyke	June 1, 1927	July 22, 1929						4,442	6,916	4,124	7,400
88	Tolowai Dekal Pontiac	Oct. 31, 1927	May 1, 1930						2,817	6,114	3,758	9,806
91	Tolowai Fully Karmelyke	Nov. 22, 1927	June 7, 1930						181	4,590	6,175	7,207
99	Tolowai Segis	July 27, 1928	Dec. 11, 1930							3,907	6,937	7,895
102	Tolowai Cocoa Karmelyke	Nov. 23, 1928	April 15, 1931							1,878	6,195	6,657
106	Tolowai Pulu Karmelyke	Jan. 2, 1929	July 20, 1931								6,242	6,791
108	Tolowai Dove Cora Segis	Jan. 21, 1929	Sept. 21, 1931									5,326
108	Tolowai Sarmara Fully	June 22, 1929	Jan. 23, 1932								4,247	5,274
120	Tolowai Cleaver Inform	June 30, 1929	Aug. 1, 1932									6,797
120	Tolowai Cleaver Gift	July 23, 1929	Feb. 28, 1932								2,815	4,184
131	Tolowai Sarmara Segis	Dec. 17, 1929	July 23, 1932									6,005
132	Tolowai Princess Karmelyke	Mar. 30, 1930	Dec. 17, 1932									4,251
140	Tolowai Dekal Karmelyke Fully	Nov. 29, 1930	July 3, 1933									
142	Tolowai Karmelyke Pontiac	May 10, 1931	Jan. 9, 1934									
143	Tolowai Karmelyke Dekal	May 1, 1931	Feb. 19, 1934									
144	Tolowai Segis Karmelyke	Sept. 9, 1931	Jan. 25, 1934									
	CLEARNESS:											
34	Lulu of Hawaii	June 18, 1912	Sept. 10, 1925		8,593	7,816	7,362	5,907	5,207	5,195	5,815	5,329
67	Sterling's Golden Bess	Dec. 28, 1925	July 22, 1928					6,058	4,560	4,408	5,316	4,567
16	Alberta's Pluss	Sept. 8, 1927	Mar. 21, 1930						1,762	1,386	4,566	5,509
29	Pluss Boy's Clementina	Nov. 1, 1917	July 18, 1930						808	5,327	6,519	5,212
26	Islander's Lulu	May 24, 1926	Nov. 27, 1930							1,512	5,279	4,785
107	Islander's Lucy	Sept. 26, 1928	July 3, 1931								4,944	5,464
104	Islander's Alberta of Hawaii	Jan. 24, 1928	Jan. 28, 1931									5,908
118	Pluss Boy's Lulu	Nov. 27, 1929	June 16, 1931									28

1. Sold May 11, 1933
2. Sold Oct. 3, 1927
3. Sold Jan. 9, 1934
4. Died Jan. 4, 1932
5. Sold May 17, 1928
6. Sold Jan. 9, 1934
7. Died Oct. 2, 1933
8. Sold May 12, 1928

BUTTER FAT PRODUCTION OF UNIVERSITY OF HAWAII HERD

(Based on Average of Composite Samples Tested Once Each Month)

Stable No.	Name	July 1, 1933 to June 30, 1934 Pounds Butter Fat	Average Percent Fat
	HOLSTEINS:		
42	Korndyke Mead Manca.....	312.86*	3.95*
49	Korndyke El Prado Manca.....	62.66*	3.30*
52	Natoma Hawaii Creamcup 2nd.....	272.62*	3.53*
65	DeKol Prilly Segis Pontiac.....	326.09	3.71
68	Uniwai Prilly Manca.....	319.24	3.82
71	Uniwai Natoma Mead Prilly.....	272.94	3.83
72	Uniwai DeKol Segis.....	304.32	3.97
74	Uniwai Luku Prilly.....	245.68	3.95
79	Uniwai Princess Segis.....	324.39	4.07
82	Uniwai Segis.....	317.10	4.71
83	Uniwai DeKol Sarcastic.....	326.44	4.18
85	Uniwai Segis Korndyke.....	254.05*	4.36*
88	Uniwai DeKol Pontiac.....	347.21	3.34
92	Uniwai Prilly Korndyke.....	276.96	4.27
99	Uniwai Sarcastic.....	278.99	3.99
102	Uniwai Creator Korndyke.....	114.01*	4.47*
104	Uniwai Pabst Korndyke.....	365.61	4.00
105	Uniwai Baby Gem Segis.....	285.76	4.42
108	Uniwai Sarcastic Prilly.....	232.33	4.22
109	Uniwai Creator Joletta.....	277.48	3.70

SUMMARY OF PRODUCTION OF UNIVERSITY OF HAWAII HERD

(based on average of composite samples taken once each month)

Table No.	Breed	July 1, 1973 to June 30, 1974 Average Fat Test	July 1, 1973 to June 30, 1974 Total Butter Fat
	HOLSTEINS:		
42	Holstein Heifer Calves	3.35*	312.34*
43	Holstein 21 Grade Mature	3.20*	68.66*
44	Holstein Herd Crossing End	3.23*	272.24*
60	Total Fertility Series Yearlings	3.71	288.09
67	Total Fertility Mature	3.82	219.64
71	Total Holstein Herd Fertility	3.85	272.34
72	Total Dairy Sample	3.97	304.58
74	Total Herd Fertility	3.98	346.68
77	Total Friesian Sample	4.07	384.49
82	Total Herd	4.21	817.10
83	Total Dairy Sample	4.18	288.46
86	Total Herd Hormone	4.36*	164.02*
88	Total Dairy Fertility	3.94	347.21
92	Total Fertility Hormone	4.29	276.36
99	Total Successes	3.99	272.00
102	Total Treatment Hormone	4.47*	134.01*
104	Total Tests Hormone	4.00	388.81
105	Total Only One Sample	4.22	265.76
106	Total Successful Fertility	4.22	288.33
109	Total Treatment Samples	3.70	277.48

BUTTER FAT PRODUCTION OF UNIVERSITY OF HAWAII HERD

(Continued)

Stable No.	Name	July 1, 1933 to June 30, 1934 Pounds Butter Fat	Average Percent Fat
	HOLSTEINS: (Continued)		
111	Uniwai Sarcastic Segis.....	152.11	3.99
112	Uniwai Princess Sarcastic.....	265.33	3.67
119	Uniwai DeKol Korndyke Prilly.....	260.22*	3.83*
122	Uniwai Korndyke Pontiac.....	228.89*	3.80*
123	Uniwai Sarcastic DeKol.....	124.84*	3.44*
125	Uniwai Segis Sarcastic.....	116.78*	3.48*
	Average**.....	289.29	3.99
	GUERNSEYS:		
51	Lulu of Hawaii.....	312.79	4.76
67	Sterling's Golden Bess.....	65.23*	4.22*
86	Alberta's Floss.....	317.06	5.48
89	Floss Boy's Clementina.....	394.49	5.40
96	Islander's Lulu.....	334.62	4.74
101	Islander Lady.....	337.95	4.82
103	Islander's Alberta of Hawaii.....	314.87	5.25
118	Floss Boy's Lulu.....	39.04*	4.35*
	Average**.....	335.29	5.07

*In herd during only part of year.
**For animals in herd during full year.

ANIMALS IN UNIVERSITY DAIRY

July 1, 1933 to June 30, 1934

Stable No.	Name	Breed	Date of Birth	Feed Cost (Year)	Feed Cost Per Day	Feed Cost Per Qt. Milk
42	Korndyke Mead Manca	H	4-26-22	$133.42*	$0.42	$0.036
49	Korndyke El Prado Manca	H	12- 6-22	39.37*	0.42	0.044
51	Lulu of Hawaii	G	6-16-23	127.93	0.35	0.041
52	Natoma Hawaii Creamcup 2nd	H	7- 3-23	117.80*	0.37	0.033
65	DeKol Prilly Segis Pontiac	H	9-25-25	141.47	0.39	0.035
67	Sterling's Golden Bess	G	12-24-25	35.30*	0.38	0.048
68	Uniwai Prilly Manca	H	1-14-26	137.82	0.38	0.035
71	Uniwai Natoma Mead Prilly	H	2-23-26	137.97	0.38	0.041
72	Uniwai DeKol Segis	H	5- 8-26	132.16	0.36	0.037
74	Uniwai Luku Prilly	H	7-28-26	131.48	0.36	0.045
79	Uniwai Princess Segis	H	2- 6-27	138.18	0.38	0.036
82	Uniwai Segis	H	3-19-27	144.29	0.40	0.041
83	Uniwai DeKol Sarcastic	H	4-24-27	141.35	0.39	0.037
85	Uniwai Segis Korndyke	H	8- 1-27	111.71*	0.35	0.041
86	Alberta's Floss	G	9- 8-27	124.05	0.34	0.044
88	Uniwai DeKol Pontiac	H	10-31-27	163.71	0.45	0.034
89	Floss Boy's Clementina	G	11- 1-27	130.18	0.36	0.038
92	Uniwai Prilly Korndyke	H	11-22-27	128.18	0.35	0.043
96	Islander's Lulu	G	3-24-28	126.28	0.35	0.038
99	Uniwai Sarcastic	H	7-27-28	135.23	0.37	0.041
101	Islander Lady	G	9-20-28	133.73	0.37	0.041
102	Uniwai Creator Korndyke	H	11-28-28	63.50*	0.33	0.051

ANIMALS IN UNIVERSITY DAIRY

(Continued)

Stable No.	Name	Breed	Date of Birth	Feed Cost (Year)	Feed Cost Per Day	Feed Cost Per Qt. Milk
103	Islander's Alberta of Hawaii	G	12-28-28	$123.24	$0.34	$0.044
104	Uniwai Pabst Korndyke	H	1- 8-29	141.17	0.39	0.033
105	Uniwai Baby Gem Segis	H	1-21-29	135.61	0.37	0.043
108	Uniwai Sarcastic Prilly	H	6-22-29	130.65	0.36	0.049
109	Uniwai Creator Joletta	H	6-30-29	132.67	0.36	0.038
111	Uniwai Sarcastic Segis	H	12-15-29	116.56	0.32	0.065
112	Uniwai Princess Sarcastic	H	3-20-30	134.64	0.37	0.039
117	Royal Clementina	G	7-18-30	77.57*	0.23	---
118	Floss Boy's Lulu	G	11-27-30	28.37*	0.30	0.067
119	Uniwai DeKol Korndyke Prilly	H	11-29-30	112.98*	0.35	0.035
121	Islander's Golden Lady	G	1-30-31	40.75*	0.21	---
122	Uniwai Korndyke Pontiac	H	3-10-31	120.27	0.33	0.043
123	Uniwai Sarcastic DeKol	H	5- 4-31	95.78	0.26	0.057
124	Uniwai Pontiac Segis	H	8-19-31	92.10	0.25	---
125	Uniwai Segis Sarcastic	H	9- 4-31	96.25	0.26	0.061
126	Uniwai Korndyke	H	11- 8-31	76.94*	0.24	---
127	Uniwai Segis Pontiac	H	2- 8-32	82.04	0.22	---
128	Uniwai Pontiac DeKol	H	6- 1-32	82.31	0.22	---
129	Uniwai Korndyke Girl	H	8-27-32	78.36	0.21	---
130	Uniwai Belle Segis	H	9- 3-32	75.31	0.21	---
131	Uniwai DeKol Korndyke Lass	H	9- 6-32	74.78	0.20	---

ANIMALS IN UNIVERSITY DAIRY

(Continued)

Stable No.	Name	Breed	Date of Birth	Feed Cost (Year)	Feed Cost Per Day	Feed Cost Per Qt. Milk
132	Uniwai Prilly DeKol	H	12-11-32	$ 84.08	$0.23	---
133	Uniwai Princess DeKol	H	12-17-32	77.90	0.21	---
134	Uniwai Pontiac Sarcastic	H	1-20-33	84.07	0.23	---
135	Uniwai Natoma	H	3-29-33	84.04	0.23	---
136	Uniwai Prilly	H	5- 4-33	87.87	0.24	---
137	Danny's Queen Floss	G	5- 8-33	87.87	0.24	---
138	Uniwai DeKol Korndyke	H	10-21-33	55.53*	0.22	---
139	Manoa Yeska Queen	G	11-13-33	48.23*	0.21	---
140	Uniwai Korndyke DeKol	H	12-24-33	51.38*	0.27	---
141	Uniwai DeKol Korndyke Pontiac	H	1- 9-34	32.72*	0.19	---
142	Korndyke Manca	H	3- 5-34	37.70*	0.32	---
	Uniwai Korndyke Pontiac DeKol	HB	6- 9-27	118.25	0.32	---
	Pride's Danny of Fern-Dell	GB	6-18-24	63.88*	0.30	---
	Clementina's Boy	GB	1- 4-32	111.33	0.30	---
	3 bull calves and 2 steers	H & G		192.15*	---	---
	TOTAL.....			$5940.46		

*In herd only part of year.

BRIEF ABSTRACTS TAKEN FROM THE PROJECT FILES OF SOME INVESTIGATIONS CARRIED ON IN THE DAIRY DIVISION DURING 1933-1934

By L. A. Henke

Agglutination Abortion Tests

Twelve tests have been made on the University of Hawaii Dairy Herd with the following results. These tests were made by the Veterinary Division of the Board of Agriculture and Forestry.

Date	Negative	Suspicious	Positive
February 4, 1930	20	0	2
May 5, 1930	40	0	11
September 9, 1930	34	9	10
December 15, 1930	40	3	0
March 11, 1931	39	3	8
August 28, 1931	40	2	7
January 13, 1932	38	10	0
May 24, 1932	37	3	6
August 20, 1932	49	2	5
December 14, 1932	51	2	2
June 1, 1933	31	13	5
November 8, 1933	33	8	0

Positive and suspicious animals are separated from the rest of the herd. While in general, succeeding tests on the same animal show the same reaction, this is not entirely true as the data above shows.

Percent Reproductive Efficiency of Dairy Herd

	Holsteins	Guernseys	Entire Herd
1929-30	76.1	68.6	74.2
1930-31	61.1	37.6	54.4
1931-32	71.2	75.5	72.3
1932-33	67.7	57.8	64.6
1933-34	73.4	57.7	70.0
5 year average	69.9	59.4	67.1

Tuberculin Test

The entire herd was tuberculin tested on October 4, 1933 by the Veterinary Division of the Board of Agriculture and Forestry and no reactors were found.

Composition and Bacterial Content of the University Dairy Milk

Sample bottles selected at random by the milk inspectors and tested by the Food Commissioner and Analyst of the Board of Health showed the following:-

Date	Sediment Rating	Fat %	Solids %	Bacteria Count
July 8, 1933	F. clean	4.0	12.7	1000
Aug. 17, 1933	F. clean	4.4	13.5	5700
Oct. 21, 1934	Clean	4.1	13.0	4000
Dec. 15, 1934	Clean	4.6	13.3	2300
Jan. 13, 1934	Clean	4.4	13.2	3100
March 11, 1934	Clean	4.5	13.5	700
Apr. 20, 1934	Clean	4.6	13.6	1200
1933-34 average		4.37	13.26	2571

Value of Alfalfa Hay as a Supplement to Green Roughages Fed Dairy Cows in Hawaii

In a second fifteen week experiment with six cows, feeding extra alfalfa hay (4.7 pounds per cow per day) to cows that had already had access to a reasonably satisfactory quantity of green roughage (51.2 pounds daily) increased average body weight by 13 pounds and milk production by 0.8 pounds per cow per day and increased the feed cost of milk production by 13.6 percent.

Green Panicum vs. Green Sudan Grass as Roughages for Dairy Cows

In a second twelve week experiment with six cows, the cows consumed an average of 57 lbs. of panicum daily as compared with 64 pounds of sudan grass and averaged two pounds greater milk production per cow per day when sudan grass was fed. Sudan grass seems more palatable, resulting in larger consumption and increased milk production.

Pineapple Plants for Cattle Feeding

Three, 600 pound Holstein heifers were fed shredded and cut pineapple plants as their sole roughage for 147 days. They consumed an average of from 22 to 45 pounds daily depending on what quantities and kinds of concentrates were fed in addition to the pineapple plants. This experiment did not show a high feeding value for pineapple plants but indicates that pineapple plants can be used to advantage as emergency feeds when pastures are dry and no other forage crops are available.

Raw Sugar as a Supplement to Rations Fed to Milking Cows

Two, twelve week experiments, each with six cows in which two pounds of raw sugar were fed each cow in addition to other concentrates and roughages decreased roughage consumption slightly, increased milk production about three percent and increased production costs about eleven percent.

Liver Fluke Control in Hawaii

In experiments on liver fluke control in Hawaii by Merrill K. Riley, then of the Zoology Department with G.W.H. Goo of the Animal Husbandry Division cooperating, it was found that killing snails with the copper sulphate treatment is under conditions prevailing around most rapidly flowing streams in Hawaii, rather expensive and hard to accomplish. Copper sulphate introduced into a swift flowing stream soon becomes so diluted that it is not effective, and even if snails in the stream are killed others from the banks soon start a new supply.

Liver fluke eggs were found in the feces of two calves artificially infested with the cercaria of the liver fluke three months after the cercaria were given to the calves orally in a gelatin capsule, indicating that the fluke grows to maturity and produces eggs three months or less after the animal becomes infested from eating vegetation which contains the cercaria of liver fluke.

Salt has been credited with removing liver fluke from cows but in one attempt where salt was fed for several days no improvement was noted, based on an examination of the feces, for the eggs of liver fluke were as abundant after feeding salt as before.

Sprouted Oats for Breeding Trouble with Dairy Cows

To date 53 cows with irregular breeding behavior have been fed sprouted oats with an equal number of controls. There is little evidence that sprouted oats has been helpful.

SWINE

At the close of the fiscal year, 11 breeding hogs, (5 Berkshires and 6 Tamworths) and 17 smaller pigs were on the University Farm. All the breeding hogs were purebred and registered.

During the year 6 Tamworth boars, 5 Tamworth gilts, 3 Berkshire boars and 9 Berkshire gilts were sold to hog raisers as breeding animals. Twenty four hogs were sold to the meat market.

BRIEF ABSTRACTS TAKEN FROM THE PROJECT FILES OF SOME INVESTIGATIONS CARRIED ON IN THE SWINE DIVISION DURING 1933-34.

By L. A. Henke

Sprouted Oats for Sows Having Breeding Troubles

To date 23 sows with an irregular breeding behavior have been fed sprouted oats with a like number of controls. Not all the oats fed sows were benefitted but their records are better than those of the controls.

Hog Cholera Protection

All hogs on the University Farm not previously protected against hog-cholera were given the serum-virus on October 10, 1933 and another group born since that date were vaccinated on April 2, 1934. These treatments were entirely for protection; no hog cholera was experienced during the year.

Avocados for Swine

In a 42 day experiment with 6 Tamworth hogs, avocados when constituting 25 percent of the concentrate mixture fed to hogs, were worth 45.6 percent as much as the grain mixture which they in part replaced.

Papayas for Swine

In a 92 day experiment with eight hogs, papayas when constituting one fourth of the concentrate mixture fed to fattening hogs were worth only 8.1 percent as much as the concentrate grain mixture which they in part replaced.

Cooked Taro Scraps for Swine

In a 56 day test with 12 pigs, averaging 82 pounds at the beginning of the experiement, cooked taro scraps when constituting 25 percent of the concentrate mixture were worth 36 percent as much as the concentrate mixture which they in part replaced.